Statistical Quality Management

The purpose of the Statistical Quality Management page is to help you find information on Australian Bureau of Statistics (ABS) statistical quality management initiatives. We've created some categories to help you in your search for data quality related information. If you work with data, then the Statistical Quality Management page may be of use to you.

The ABS Data Quality Framework

Are you trying to figure out whether a particular statistic is fit for your purpose?
Would you like to assess your own data to find where improvements can be made?
Would you like to report the quality of your data?

The ABS Data Quality Framework can help you do all of these things.
This page provides information on the dimensions that define data quality, along with a link to an online assistant that can help you use the ABS Data Quality Framework for your own data quality purposes.

Data Quality Management

Managing statistical processes to produce quality data can be difficult, as it is hard to not lose sight of the outcomes that you are hoping to achieve when you are busy trying to create outputs.
The data quality management page provides information papers to help you think about the risks that are associated with data quality management, along with information on how to reduce your exposure to these types of risks.

ABS Quality Information Papers

This page contains links to papers regarding quality authored by ABS staff.

Other Sources of Information Related to Quality in the ABS

Ever wanted to know about the different methods and standards that are applied to the data that the Australian Bureau of Statistics (ABS) produces?
This page provides links to other useful sources of information regarding this type of data quality management.

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The ABS Data Quality Framework

The ABS Data Quality Framework (ABS DQF) provides the standards for assessing and reporting on the quality of statistical information. It can also assist you with the development of statistical collections to produce high quality outputs.

The ABS DQF is based on the Statistics Canada Quality Assurance Framework (PDF, 178.05 KB) and the European Statistics Code of Practice (PDF, 1.09 MB). It consists of seven dimensions of quality: institutional environment, relevance, timeliness, accuracy, coherence, interpretability, and accessibility.

Detailed information on the ABS DQF and its uses can be found in the following information paper: ABS 2009, *ABS Data Quality Framework*, May 2009, cat. no. 1520.0, ABS, Canberra.

Quality Declarations

The ABS DQF has been used to declare the quality of collections in the form of *Quality Declarations*. Quality declarations provide a brief overview about the quality of a collection. More information on quality declarations can be found in Quality Declarations - a brief overview.

Some examples of Quality Declarations: Census Labour Force Consumer Price Index National Accounts

Data Quality Online Tool

The ABS as part of the National Statistical Service (NSS) created an online assistant called the Data Quality Online Tool to help people understand and utilise the ABS DQF. The Data Quality Online tool is found on the NSS website (www.nss.gov.au). It provides conceptual information in the form of questions for each of the seven dimensions of the ABS DQF to help you determine whether data is fit for your needs.

Other Sources of Information Regarding the ABS DQF

ABS (Australian Bureau of Statistics) 2007, *Information Paper: Quality Dimensions of the Australian National Accounts*, August 2007, cat. no. 5216.0.55.002, ABS, Canberra.

Allen, B 2002, "Qualifying Quality – Issues of Presentation and Education", Proceedings of the Statistics Canada Symposium, 2001. (PDF, 60.0 KB)

Gilbert, N 2010, "ABS Data Quality Framework: Linking Quality Assessment to Development of Performance Indicators", European Conference on Quality in Official Statistics. (.doc 53.5 KB)

Lee, G & Allen, B 2001, "Educated Use of Information about Data Quality", Bulletin of the International Statistical Institute, 53rd Session, Seoul, Korea. (PDF, 16.78 KB)

Neideck, G 2007, "A Framework for the Accuracy Dimension of Data Quality for Price Statistics", Ottawa Group, 10th Meeting. (PDF, 127.02 KB)

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INSTITUTIONAL ENVIRONMENT

The first dimension of quality in the ABS DQF is the Institutional Environment. This dimension refers to the institutional and organisational factors which may have a significant influence on the effectiveness and credibility of the agency producing the statistics. Consideration of the institutional environment associated with a statistical product is important as it enables an assessment of the surrounding context, which may influence the validity, reliability or appropriateness of the product.

The dimension of Institutional Environment can be evaluated by considering six key aspects:

- **Impartiality and objectivity**: whether the production and dissemination of data are undertaken in an objective, professional and transparent manner.
- **Professional independence**: the extent to which the agency producing statistics is independent from other policy, regulatory or administrative departments and bodies, as well as from private sector operators, and potential conflict of interest.
- **Mandate for data collection**: the extent to which administrative organisations, businesses and households, and the public at large may be compelled by law to allow access to, or to provide data to, the agency producing statistics.
- **Adequacy of resources**: the extent to which the resources available to the agency are sufficient to meet its needs in terms of the production or collection of data.
- **Quality commitment**: the extent to which processes, staff and facilities are in place for ensuring the data produced are commensurate with their quality objectives.
- **Statistical confidentiality**: the extent to which the privacy of data providers (households, enterprises, administrations and other respondents), and the confidentiality of the information they provide, are guaranteed (if relevant).

The Institutional Environment dimension of a dataset or a statistical product can be evaluated by asking specific questions about the aspects listed above. We provide some suggestions of questions which might be asked, but these are not intended to be comprehensive or exhaustive. We encourage users and producers of statistics to generate their own questions to assess Institutional Environment in an appropriate way within their context.

Suggested questions to assess Institutional Environment:

- Which organisation(s) has supplied the data? What sort of organisation is this (e.g., public, commercial, non-government organisation)?
- Under what authority or legislation were the data collected?
- What procedures are in place to enable a need for a statistical product to be evaluated with respect to its scope, detail or cost?
- To what extent are quality guidelines documented by the agency?
- Is statistical confidentiality guaranteed, and if so, under what authority?
- To what extent, and how quickly, are any identified errors in published statistics corrected and publicised?

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RELEVANCE

The second dimension of quality in the ABS DQF is Relevance. This dimension refers to how well the statistical product or release meets the needs of users in terms of the concept(s) measured, and the population(s) represented. Consideration of the relevance associated with a statistical product is important as it enables an assessment of whether the product addresses the issues most important to policy-makers, researchers and to the broader Australian community.

The dimension of Relevance can be evaluated by considering the following key aspects:

- **Scope and coverage**: the purpose or aim for collecting the information, including identification of the target population, discussion of whom the data represent, who is excluded and whether there are any impacts or biases caused by exclusion of particular people, areas or groups.
- **Reference period**: this refers to the period for which the data were collected (e.g., the September-December quarter of the 2008-09 financial year), as well as whether there were any exceptions to the collection period (e.g., delays in receipt of data, changes to field collection processes due to natural disasters).
- **Geographic detail**: information about the level of geographical detail available for the data (e.g., postcode area, Statistical Local Area) and the actual geographic regions for which data are available.
- **Main outputs/ data items**: whether the data measures the concepts meant to be measured for its intended uses.
- **Classifications and statistical standards**: the extent to which the classifications and standards used reflect the target concepts to be measured or the population of interest.
- **Type of estimates available**: this refers to the nature of the statistics produced, which could be index numbers, trend estimates, seasonally adjusted data, or original unadjusted data.
- **Other cautions**: information about any other relevant issue or caution that should be exercised in the use of the data.

For more information about specific terms described above which are relevant to sample surveys (e.g., "scope", "coverage"), please see "**An Introduction to Sample Surveys: A User's Guide**".

To assist in evaluating the Relevance dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Relevance:

- About whom, or what, were the data collected?
- Is there a time difference between the intended reference period, and the actual reference period of the collected data?
- How useful are these data at small levels of geography?
- Does this data source provide all the relevant items or variables of interest? Does the population presented by the data match the data need?
- To what extent does the method of data collection seem appropriate for the information being gathered?
- Have standard classifications (e.g., industry or occupation classifications) been used in the collection of the data? If not, why not?
- In what form are the statistics available? Are they original raw numbers, or indexes, or estimates?
- If rates and percentages have been calculated, are the numerators and denominators consistent?

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TIMELINESS

Timeliness is the third dimension of quality in the ABS DQF. Timeliness refers to the delay between the reference period (to which the data pertain) and the date at which the data become available; and the delay between the advertised date and the date at which the data become available (i.e., the actual release date). These aspects are important considerations in assessing quality, as lengthy delays between the reference period and data availability, or between advertised and actual release dates, can have implications for the currency or reliability of the data.

The dimension of Timeliness can be evaluated by considering two key aspects:

- **Timing**: this refers to the time lag between the reference period and when the data actually become available (including the time lag between the advertised date for release and the actual date of release). For example, the reference period may be the 2004-05 financial year, but data may not become available for analysis until the middle of 2006.
- **Frequency of survey**: this refers to whether the survey or data collection was conducted on a one-off basis, or whether it is expected to be ongoing. If it is expected to be ongoing, frequency also includes information about the proposed frequency of repeated collections and when data will be released for subsequent reference periods.

To assist in evaluating the Timeliness dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Timeliness:

- What is the gap of time between the reference period, the time when the data were actually collected, and the time when the data became available?
- Are there likely to be subsequent surveys or data collection issues for this topic?
- Are there likely to be updates or revisions to the data after official release?
- What is the gap between the advertised and actual release dates of the data?

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ACCURACY

The fourth dimension of quality in the ABS DQF is Accuracy. Accuracy refers to the degree to which the data correctly describe the phenomenon they were designed to measure. This is an important component of quality as it relates to how well the data portray reality, which has clear implications for how useful and meaningful the data will be for interpretation or further analysis. In particular, when using administrative data, it is important to remember that statistical outputs for analysis are generally not the primary reason for the collection of the data.

Accuracy should be assessed in terms of the major sources of errors that potentially cause inaccuracy. Any factors which could impact on the validity of the information for users should be described in quality statements.

The dimension of Accuracy can be evaluated by considering a number of key aspects:

- **Coverage error**: this occurs when a unit in the sample is incorrectly excluded or included, or is duplicated in the sample (e.g., a field interviewer omits to interview a set of households or people in a household). Coverage of the statistical measures could be assessed by comparing the population included for the data collection to the target population.
- **Sample error**: where sampling is used, the impact of sample error can be assessed using information about the total sample size and the size of the sample in key output levels (e.g., number of sample units in a particular geographical area), the sampling error of the key measures, and the extent to which there are changes or deficiencies in the sample which could impact on accuracy.
- **Non-response error**: this refers to incomplete information provided by a respondent (e.g., when some data are missing, or the respondent has not answered all questions or provided all required information). Assessment should be based on non-response rates, or percentages of estimates imputed, and any statistical corrections or adjustment made to the estimates to address the bias from missing data.
- **Response error**: this refers to a type of error caused by respondents intentionally or accidentally providing inaccurate responses, or incomplete responses, during the provision of data. This occurs not only in statistical surveys, but also in administrative data collection where forms, or concepts on forms, are not well understood by respondents. Respondent errors are usually gauged by comparison with alternative sources of data and follow-up procedures.
- **Other sources of errors**: Any other serious accuracy problems with the statistics should be considered. These may include errors caused by incorrect processing of data (e.g. erroneous data entry or recognition), alterations made to the data to ensure the confidentiality of the respondents (e.g. by adding "noise" to the data), rounding errors involved during collection, processing or dissemination, and other quality assurance processes.
- **Revisions to data**: the extent to which the data are subject to revision or correction, in light of new information or following rectification of errors in processing or estimation, and the time frame in which revisions are produced.

To assist in evaluating the Accuracy dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Accuracy:

- Are there particular questions which are hard to understand and which respondents may provide an inaccurate response?
- To what extent are there procedures in place to manage processing error?
- Are any areas of the population unaccounted for in data collection?
- Are there particular questions which are sensitive and which respondents are less likely to answer?
- Have the data been adjusted in any way to account for non-response?
- Have the data been adjusted to ensure confidentiality of responses? If so, what methods have been used?
- What is the organisation's revision policy? How quickly are revisions produced and disseminated?
- Have the data been rounded at any stage in the collection or dissemination process?
- Has the sampling method changed for this data collection compared with previous cycles of data collection?
- Have weights been applied to the dataset? What are the benchmarks with which the weights align?

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COHERENCE

The fifth dimension of quality in the ABS DQF is Coherence. Coherence refers to the internal consistency of a statistical collection, product or release, as well as its comparability with other sources of information, within a broad analytical framework and over time. The use of standard concepts, classifications and target populations promotes coherence, as does the use of common methodology across surveys. Coherence is an important component of quality as it provides an indication of whether the dataset can be usefully compared with other sources to enable data compilation and comparison. It is important to note that coherence does not necessarily imply full numerical consistency, rather consistency in methods and collection standards. Quality statements of statistical measures must include a discussion of any factors which would affect the comparability of the data over time.

The Coherence of a statistical collection, product or release can be evaluated by considering a number of key aspects:

- **Changes to data items**: to what extent a long time series of particular data items might be available, or whether significant changes have occurred to the way that data are collected.
- **Comparison across data items**: this refers to the capacity to be able to make meaningful comparisons across multiple data items within the same collection. The ability to make comparisons may be affected if there have been significant changes in collection, processing or estimation methodology which might have occurred across multiple items within a collection.
- **Comparison with previous releases**: the extent to which there have been significant changes in collection, processing or estimation methodology in this release compared with previous releases, or any 'real world' events which have impacted on the data since the previous release.
- **Comparison with other products available**: this refers to whether there are any other data sources with which a particular series has been compared, and whether these two sources tell the same story. This aspect may also include identification of any other key data sources with which the data cannot be compared, and the reasons for this, such as differences in scope or definitions.

To assist in evaluating the Coherence dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Coherence:

- Is it possible to compile a consistent time series of a particular data item of interest over a number of years?
- To what extent can a user meaningfully compare several data items within this collection?
- Could any natural disasters or significant economic events have influenced the data since the previous release?
- Have these data been confronted with other data sources, and are the messages consistent from all data sources?

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INTERPRETABILITY

Interpretability is the sixth dimension of quality in the ABS DQF. Interpretability refers to the availability of information to help provide insight into the data. Information available which could assist interpretation may include the variables used, the availability of metadata, including concepts, classifications, and measures of accuracy. Interpretability is an important component of quality as it enables the information to be understood and utilised appropriately.

The Interpretability of a statistical collection, product or release can be evaluated by considering two key aspects:

- **Presentation of the information**: the form of presentation and the use of analytical summaries to help draw out the key message of the data
- **Availability of information regarding the data**: the availability of key material to support correct interpretation, such as concepts, sources and methods; manuals and user guides; and measures of accuracy of data.

To assist in evaluating the Interpretability dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Interpretability:

- Are terms used in the statistical release or dataset which are ambiguous or likely to be confusing for a user?
- To what extent can a user of the release or dataset find supporting information about the data to enable improved interpretation?
- Are there information papers or articles available to help provide more insight into the concept(s) measured?
- Is there information available to help the user gauge the potential magnitude of error in the data?

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ACCESSIBILITY

Accessibility is the seventh and final dimension of quality in the ABS DQF. Accessibility refers to the ease of access to data by users, including the ease with which the existence of information can be ascertained, as well as the suitability of the form or medium through which information can be accessed. The cost of the information may also represent an aspect of accessibility for some users. Accessibility is a key component of quality as it relates directly to the capacity of users to identify the availability of relevant information, and then to access it in a convenient and suitable manner.

The Accessibility of a statistical collection, product or release can be evaluated by considering two key aspects:

- **Accessibility to the public**: the extent to which the data are publicly available, or the level of access restrictions. Additionally, special data services may include the availability of special or non-standard groupings of data items or outputs, if required.
- **Data products available**: this refers to the specific products available (e.g., publications, spreadsheets), the formats of these products, their cost, and the available data items which they contain.

To assist in evaluating the Accessibility dimension of a dataset or a statistical product, we provide some suggestions of questions which might be asked below.

Suggested questions to assess Accessibility:

- How easily can a user obtain this information? Is it publicly available?
- What range of products are available, and what are their costs?
- Are the data available in suitable formats?

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ABS Quality Declarations - a brief summary

What is a 'quality declaration'?

Quality declarations are intended to be informative statements about the quality of statistical products using the dimensions of the data quality framework adopted by the Australian Bureau of Statistics (ABS). They are designed for a web-based environment.

Quality declarations will complement, but not replace, our existing explanatory and technical notes, and more detailed documentation.

Why are we producing quality declarations?

The ABS strives to ensure that the users of our statistics are well informed on the quality of these statistics in order to assess their fitness for purpose. This value is deeply held throughout the ABS and is reflected in the ABS Corporate Plan. Quality declarations are an initiative to provide concise quality summaries for users in an easily accessible format.

Why should you read them?

Quality Declarations are designed to help in determining the 'fitness for purpose' of the data you are viewing. 'Fitness for purpose' refers to the way the data meet your need. That is, whether you can use the data for the purpose you had in mind.

What is covered in a quality declaration?

- Institutional Environment
- Relevance
- Timeliness
- Accuracy
- Coherence
- Interpretability
- Accessibility

You will need to read each section of the quality declaration to make a judgment as to the fitness for purpose of the statistics. This is because the information contained within one section may impact on whether the statistics are useful for your particular purpose.

Quality Declarations are designed to be brief statements that highlight key aspects of the fitness for purpose of the data. More detailed information can be accessed through the Explanatory Notes of a statistical product.

Where will I find quality declarations?

Quality Declarations will be accessible through an icon near the product name, as well as having a link within the Explanatory Notes tab, in the same way that the Glossary, Explanatory Notes and other products are linked. Quality Declarations will be associated with products which can be accessed from the "Statistics" area of the website.

Example

When will they be on the website?

Quality declarations were introduced to the ABS website from 25 October 2007 with the Census of Population and Housing. Further quality declarations are being added progressively from January 2008 onwards.

Questions?

For more information please call **1300 135 070** from within Australia or **+61 2 9268 4909** from overseas. Alternatively, please email client.services@abs.gov.au

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- Census home
- About the Census
- 2016 Census
- Data & analysis
- Reference & information
- Data quality
- Help & feedback
- News & media

There are many issues which can affect the quality of Census data. This page provides access to general information about data quality in the 2006 Census, including the Quality Declaration, specific details on issues affecting the quality of different Census characteristics, and access to an up-to-date list of known data errors and corrections.

For information about data quality in the most recent Census, visit the Data quality page.

For more information about data quality in previous Censuses, visit the Historical data quality page.

DATA QUALITY: 2006 Census of Population and Housing

The 2006 Census Data Quality Declaration
Includes information on the quality of Census Data with regard to relevance, timeliness, accuracy, coherence, interpretability, and accessibility.

2006 Census Characteristics Documents in the 2006 Census Dictionary (including Data Quality Statements) provide detailed information on each Census characteristic including a description, an image of the question as it appeared on the Census form, details about the classification and information on issues affecting data quality for that particular characteristic.

2006 Non-response rates (cat. no. 2914.0.55.001) contain general information about the 2006 non-response rates for person and dwelling variables. It includes non-response rate tables for each state and territory, and the whole of Australia, for place of usual residence and place of enumeration.

2006 Census Data Updates and Corrections provides an up-to-date list of known errors or issues in Census data products and information on corrections.

This page first published 25 October 2007, last updated 9 December 2022

6202.0 - Labour Force, Australia, Jun 2014 Quality Declaration

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 10/07/2014

QUALITY DECLARATION - SUMMARY

INSTITUTIONAL ENVIRONMENT

Labour Force statistics are compiled from the Labour Force Survey which is conducted each month throughout Australia as part of the Australian Bureau of Statistics (ABS) household survey program. For information on the institutional environment of the ABS, including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

RELEVANCE

The Labour Force Survey provides monthly information about the labour market activity of Australia's resident civilian population aged 15 years and over. The Labour Force Survey is designed to primarily provide estimates of employment and unemployment for the whole of Australia and, secondarily, for each state and territory.

TIMELINESS

The Labour Force Survey enumeration begins on the Sunday between the 5th and 11th of the month, except for the Christmas and New Year holiday period. In December enumerations starts between the 3rd and 9th (4 weeks after November enumeration begins). In January enumeration starts between the 7th and 13th (5 weeks after December enumeration begins).

Key estimates from the Labour Force Survey are published in two stages. The first, Labour Force, Australia (cat. no. 6202.0), is released 32 days after the commencement of enumeration for the month, with the exception of estimates for December which are published 39 days after the commencement of enumeration.

The second stage includes detailed data that were not part of the first stage and are published in Labour Force, Australia, Detailed - Electronic Delivery (cat. no. 6291.0.55.001) and Labour Force, Australia, Detailed, Quarterly (cat. no. 6291.0.55.003). The second stage is released 7 days after the first stage.

ACCURACY

The Labour Force Survey is based on a sample of private dwellings (approximately 26,000 houses, flats etc) and non-private dwellings, such as hotels and motels. The sample covers about 0.32% of the Australian civilian population aged 15 years or over. The Labour Force Survey is designed primarily to provide estimates of key labour force statistics for the whole of Australia and, secondarily, for each state and territory.

Two types of error are possible in an estimate based on a sample survey: non-sampling error and sampling error.

Non-sampling error arises from inaccuracies in collecting, recording and processing the data. Every effort is made to minimise reporting error by the careful design of questionnaires, intensive training and supervision of interviewers, and efficient data processing procedures. Non-sampling error also arises because information cannot be obtained from all persons selected in the survey. The Labour Force Survey receives a high level of cooperation, with an average response rate for the last year being 94%.

Sampling error occurs because a sample, rather than the entire population, is surveyed. One measure of the likely difference resulting from not including all dwellings in the survey is given by the standard error. There are about two chances in three that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey, and about nineteen chances in twenty that the difference will be less than two standard errors.

Standard errors of key estimates and movements since the previous month are available in Labour Force, Australia (cat. no. 6202.0). The standard error of other estimates and movements may be calculated by using the spreadsheet contained in Labour Force Survey Standard Errors, Data Cube (cat. no. 6298.0.55.001).

COHERENCE

The ABS has been conducting the Labour Force Survey each month since February 1978. While seeking to provide a high degree of consistency and comparability over time by minimising changes to the survey, sound survey practice requires careful and continuing maintenance and development to maintain the integrity of the data and the efficiency of the collection.

The changes which have been made to the Labour Force Survey have included changes in sampling methods, estimation methods, concepts, data item definitions, classifications, and time series analysis techniques. In introducing these changes the ABS has generally revised previous estimates to ensure consistency and coherence with current estimates. For a full list of changes made to the Labour Force Survey see Chapter 20 in Labour Statistics: Concepts, Sources and Methods (cat. no. 6102.0.55.001).

INTERPRETABILITY

The key estimates from the Labour Force Survey are available as original, seasonally adjusted and trend series. Seasonal adjustment is a means of removing the effects of normal seasonal variation from the series so other influences on the series can be more clearly recognised. Seasonal adjustment does not aim to remove the irregular influences which may be present and therefore month-to-month movements may not be reliable indicators of underlying behaviour. To assist in interpreting the underlying behaviour, the ABS produces the trend series by smoothing the seasonally adjusted series to reduce the impact of the irregular component. For further information, see A Guide to Interpreting Time Series - Monitoring Trends (cat. no. 1349.0).

Further information on the terminology and other technical aspects associated with statistics from the Labour Force Survey can be found in the publication Labour Force, Australia (cat. no. 6202.0), which contains detailed Explanatory Notes, Standard Error information and a Glossary.

ACCESSIBILITY

Please see the Related Information tab for the list of products that are available from this collection

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This page last updated 6 August 2014

6401.0 - Consumer Price Index, Australia, Jun 2014 Quality Declaration

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 23/07/2014

QUALITY DECLARATION - SUMMARY

INSTITUTIONAL ENVIRONMENT

The ABS is independent of government, with the Australian Bureau of Statistics Act 1975 giving the Statistician the power to control the operations of the ABS. For further information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

RELEVANCE

The Australian Consumer Price Index (CPI) is conceptually designed to provide a general measure of price inflation for all Australian households. In practice, the index is constrained to only measure the changes in prices faced by private households living in the six State and two Territory capital cities.

The simplest way of thinking about the CPI is to imagine a basket of goods and services comprising items bought by Australian households. Now imagine the basket is purchased each quarter. As prices change from one quarter to the next, so too will the total price of the basket. The CPI is simply a measure of the changes in the price of this fixed basket as the prices of items in it change.

The total basket is divided into 11 major groups, each representing a specific set of commodities:

- Food and non-alcoholic beverages
- Alcohol and tobacco
- Clothing and footwear
- Housing
- Furnishings, household equipment and services
- Health
- Transport
- Communication
- Recreation and culture
- Education
- Insurance and financial services.

In the case of the Australian CPI, this methodology involves devising a basket of goods and services representative of those acquired by metropolitan private households during the course of a full year. The annual basket used in the CPI is based primarily on data obtained from the Household Expenditure Survey (HES) which is the only authoritative source of data on the expenditures of different household types in each of the capital cities.

The CPI is an important economic indicator used in formulating monetary policy and in a wide range of business, economic and social analysis and decision-making.

Seasonally adjustment is used to produce additional analytical series, such as 'All groups CPI, seasonally adjusted', and the underlying trend series (trimmed mean and weighted median). The seasonally adjusted estimates for the expenditure classes contributing to these analytical series are included in the time series spreadsheets. The headline figure, however, remains as the original estimate of the 'All groups CPI'.

TIMELINESS

The CPI is released each quarter, (three months ending March, June, September and December). The data are typically released on the fourth Wednesday after the end of the reference quarter, depending on public holidays, but no later than the last Wednesday of the month after the end of the reference quarter.

ACCURACY

The overall (or All groups) CPI provides a measure of the average rate of price change. In calculating an average measure of this type it is necessary to recognise that some items are more important than others. Measures of expenditure on each of the 87 CPI expenditure classes are obtained from the HES, which is the only authoritative source of data on the expenditures of different household types in each of the capital cities. It is important to understand that the composition of the basket and the relative importance of items in it relate to households as a whole - it represents the expenditures of all in scope households, not the expenditure pattern of an “average household” or of any particular household type or size.

The collection of prices in each capital city is largely carried out by trained field staff. Prices are collected in the kinds of retail outlets and other places where metropolitan households purchase goods and services. This involves collecting prices from many sources such as supermarkets, restaurants, travel agents and schools.

In total, around 100,000 separate price quotations are collected each quarter. The frequency of price collection by item varies as necessary to obtain reliable price measures. Prices of some items are volatile (i.e. their prices may vary many times each quarter) and for these prices frequent price observations are necessary to estimate a reliable average quarterly price.

The CPI takes account of any changes in the quality of the items priced to ensure that the index reflects only pure price change. Items available in stores are constantly changing. The CPI identifies changes to item specifications and adjusts observed prices to eliminate quality differences.

The CPI uses a hierarchy of rounding procedures to ensure consistency between published index numbers and percentage changes. However, rounding differences can arise in the "points contributions" published in tables 6, 7 and 8 because of the different levels of precision required in those data. Index numbers are released as final figures at the time they are first published. Revisions have never occurred and will only occur in exceptional circumstances.

COHERENCE

The CPI was first compiled in 1960, with index numbers backcast to 1948. Since its inception in its current form in 1960, reviews of the CPI have usually been carried out at about six-yearly intervals. Following each review, which involves revising the list of items and their weights, the new series are linked to the old to form a continuous series. This linking is carried out in such a way that the resulting continuous series reflect only price changes and not differences in the composition of the old and new baskets. This approach allows changes in expenditure patterns to be reflected in the CPI. The data are comparable from the start of each data series.

In analysing price movements in Australia, an important consideration is Australia's performance relative to other countries. However, a simple comparison of All groups (or headline) CPIs is often inappropriate because of the different measurement approaches used by countries for certain products, particularly housing and financial and insurance services. To provide a better basis for international comparisons, the Seventeenth International Conference of Labour Statisticians adopted a resolution which called for countries to 'if possible, compile and provide for dissemination to the international community an index that excludes housing and financial services' in addition to the all-items index.

INTERPRETABILITY

The Consumer Price Index (CPI) publication (cat. no. 6401.0) contains Explanatory Notes that provide information about the structure, weights, data sources and other technical aspects of the series. Further information is available in A Guide to the Consumer Price Index: 16th Series, 2011 (cat. no. 6440.0). Another useful source is Information Paper: Introduction of the 16th Series Australian Consumer Price Index, 2011 (cat. no. 6470.0). More detailed information can also be found in Australian Consumer Price Index: Concepts, Sources and Methods, 2011 (cat. no. 6461.0).

ACCESSIBILITY

A link to the latest issue of the Consumer Price Index can be found on the ABS home page <www.abs.gov.au>. Detailed information, including a range of time series spreadsheets, can be found in the "Downloads" tab of this web page. For links to data and publications relating to the Labour Price Index and other prices series, please see the Inflation and Price Indexes Topics @ a Glance.

5206.0 - Australian National Accounts: National Income, Expenditure and Product, Jun 2014 Quality Declaration

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 03/09/2014

QUALITY DECLARATION - SUMMARY

INSTITUTIONAL ENVIRONMENT

For information on the institutional environment of the Australian Bureau of Statistics (ABS), including the legislative obligations of the ABS, financing and governance arrangements, and mechanisms for scrutiny of ABS operations, please see ABS Institutional Environment.

RELEVANCE

The standards governing national accounts are agreed internationally, and detailed in the "System of National Accounts 2008" (SNA08). SNA08 is endorsed by the five major international economic organisations: the United Nations, the International Monetary Fund, the OECD, the World Bank and the European Commission. The current complete version of SNA08 is available online: http://unstats.un.org/unsd/nationalaccount/SNA2008.pdf

The Australian national accounts differ from the recommendations in the SNA08 in certain cases where the data is not available to meet these requirements, or it is not considered practical to adhere to the standards. For more information on the differences between the Australian national accounts and the SNA08 please see Australian National Accounts: Concepts, Sources and Methods (cat. no. 5216.0).

TIMELINESS

The quarterly Australian national accounts are compiled using data from three consecutive months (e.g. January, February, March), with the release of this information generally occurring on the first Wednesday of the third month following the end of the quarter (e.g. data for the June quarter will be released on the first Wednesday in September).

ACCURACY

Accuracy remains the main focus of ABS quality control. However, in the case of the national accounts, it is recognised internationally that an objective accuracy measure in the sense of proximity to the ‘true value’ is impossible to produce. The national accounts are a highly complex set of economic statistics. They combine a very large number of internal and external data sources covering various aspects of the economy to derive GDP and other headline measures.

The national accounts compilation process transforms the various partial data into a set of economic accounts. To make the data more analytically useful it also requires a further transformation of the data to produce the headline chain volume, seasonally adjusted/trend estimates of GDP and components. These data transformations involve various assumptions.

Given the variety of data used, and the transformations and aggregations used in the national accounts process, an assessment of accuracy is necessarily subjective and indirect. It involves an assessment of the national accounts process, the input data and the transformations used to produce the national accounts. The ABS aims to achieve best practice in each of these facets of national accounts compilation. The related quality concept of reliability can be objectively measured by an analysis of revisions, but a reliable series is not necessarily accurate if it is based on poor quality data.

For a more in-depth discussion of the accuracy of the national accounts including an analysis of revisions please see the Information Paper: Quality Dimensions of the Australian National Accounts (cat. no. 5216.0.55.002)

COHERENCE

The coherence of data is an aspect of quality closely associated with accuracy, both within the national accounts system, and compared with the partial indicators of the economy. A major unifying feature within the Australian System of National Accounts is the use of supply and use methodology to confront the data and balance the components of GDP in annual terms.

The ABS publishes a large amount of data on various aspects of the economy. As the majority of these are used in the national accounts it could be expected that there would be coherence between the partial indicators data and the national accounts. While there are some differences in coverage and concept, there are formal processes in place to ensure that the collections and national accounts staff come to a common view of the statistical treatment of current economic events. National accounts staff also have the opportunity to comment on the partial indicators before they are finalised for publication. None the less, over time, the process of annual benchmarking may lead to some divergencies with the partial indicators.

INTERPRETABILITY

There are a number of derived statistics and data transformations published with national accounts output to aid interpretation of the data. These include chain volume estimates, trend and seasonally adjusted estimates, GDP growth rates and contributions to GDP growth. Analysis and commentary is included with each publication, and quarterly presentations are available to key users across Australia to provide more information and discussion of the estimates. Australian National Accounts: Concepts, Sources and Methods (cat. no. 5216.0) is a comprehensive description of the methods and concepts underpinning the national accounts.

ACCESSIBILITY

For links to all national accounts related data and publications, recent national accounts changes and forthcoming events, relevant websites and a range of other information about the Australian National Accounts, please see the National Accounts Topics @ a Glance.

For more detailed information about the quality dimensions of the Australian National Accounts please see the Information Paper: Quality Dimensions of the Australian National Accounts, Australia 2007 (cat. no. 5216.0.55.002)

This page last updated 2 December 2014

Data Quality Management

Statistical Risk Management

Statistical risk is the chance or likelihood of something going wrong with your statistical processes that affects the quality or integrity of your statistical outputs.

The following papers on this page help to provide information on some quality initiatives that may help you in managing the risks around your data.

Developing Data Quality Statements

Among national statistical agencies, quality is generally accepted as "fitness for purpose". Fitness for purpose implies an assessment of an output, with specific reference to its intended objectives or aims. The ABS recommends that when assessing the quality of a statistical collection or product, a Data Quality Statement be developed. A Data Quality Statement is a presentation of information about the quality of a statistical collection or product using the ABS Data Quality Framework.

Data Quality Statement: A checklist

Quality Gates

Have you ever gotten to the end of your statistical process and realised you made a mistake right back at the beginning?
Quality gates can help you manage the quality of your statistical processes by helping you to identify any data problems closer in the process to when they occur. This allows you to fix the potential errors in a more timely manner.

ABS 2010, *Information Paper: Quality Management of Statistical Processes Using Quality Gates*, Dec 2010, cat. no. 1540.0, ABS, Canberra.

Gilbert, N 2011, "Quality Gates Framework for Statistical Risk Management", South African Reserve Bank Research Department Seminar. (PDF, 36.39 KB)

Schubert, P., et al. 2006, "Using Quality Measures to Manage Statistical Risks in Business Surveys", Proceedings of Q2006 European Conference on Quality in Survey Statistics. (PDF, 53.36 KB)

Quality Management of Administrative Data

Administrative data is useful for many statistical purposes. However, because of the nature of administrative data, there are some unique challenges and risks that need to be managed in order to assure the quality of statistical outputs. The paper below outlines common challenges and strategies for managing the acquisition of administrative data.

ABS 2011, *Information Paper: Quality Management of Statistical Outputs Produced from Administrative Data*, March 2011, cat. no. 1522.0, ABS, Canberra.

Statistical Quality Incident Response Plan

A quality incident occurs when the quality of the data are questioned. A Statistical Quality Incident Response Plan is a guide for resolving serious doubts about the statistical results by examining the processes that contributed to them. The Statistical Quality Incident Response Plan is a step-by-step guide to contingency planning; from discussing the issues in the first meeting; to investigating and identifying possible causes; through to resolving the issue and incorporating the lessons learnt from the situation into the normal day to day process.

ABS 2012, *Information Paper: Statistical Quality Incident Response Plan*, June 2012, cat. no. 1542.0, ABS, Canberra.

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ABS Quality Information Papers

ABS Data Quality Framework

ABS (Australian Bureau of Statistics) 2007, *Information Paper: Quality Dimensions of the Australian National Accounts*, August 2007, cat. no. 5216.0.55.002, ABS, Canberra.

ABS 2009, *ABS Data Quality Framework*, May 2009, cat. no. 1520.0, ABS, Canberra.

Allen, B 2002, "Qualifying Quality – A Framework for Supporting Quality-Informed Decisions", Proceedings of the Statistics Canada Symposium. (PDF, 507.58 KB)

Gilbert, N 2010, "ABS Data Quality Framework: Linking Quality Assessment to Development of Performance Indicators", European Conference on Quality in Official Statistics. (.doc 53.5 KB)

Lee, G & Allen, B 2001, "Educated Use of Information about Data Quality", Bulletin of the International Statistical Institute, 53rd Session, Seoul, Korea. (PDF, 16.78 KB)

Neideck, G 2007, "A Framework for the Accuracy Dimension of Data Quality for Price Statistics", Ottawa Group, 10th Meeting. (PDF, 127.02 KB)

ABS Quality Culture Papers

Trewin, D 2002, "The Importance of a Quality Culture", Survey Methodology, Vol. 28, No. 2, pp. 125-133, cat. No. 12-001, Statistics Canada, Ottawa. (PDF, 507.58 KB)

Yu, F 2003, "Making Data Quality Visible in Practice", Proceedings of the Statistics Canada Symposium. (PDF, 180.25 KB)

Quality Management Papers

ABS 2010, *Information Paper: Quality Management of Statistical Processes Using Quality Gates*, Dec 2010, cat. no. 1540.0, ABS, Canberra.

ABS 2011, *Information Paper: Quality Management of Statistical Outputs Produced from Administrative Data*, March 2011, cat. no. 1522.0, ABS, Canberra.

ABS 2012, *Information Paper: Statistical Quality Incident Response Plan*, June 2012, cat. no. 1542.0, ABS, Canberra.

Gilbert, N 2011, "Quality Gates Framework for Statistical Risk Management", South African Reserve Bank Research Department Seminar. (PDF, 36.39 KB)

Schubert, P., et al. 2006, "Using Quality Measures to Manage Statistical Risks in Business Surveys", Proceedings of Q2006 European Conference on Quality in Survey Statistics. (PDF, 53.36 KB)

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ABS Data Quality Statement Checklist

1. **What is a Data Quality Statement?**

The ABS recommends that when assessing the quality of a statistical collection or product, a Data Quality Statement be developed. A Data Quality Statement is a presentation of information about the quality of a statistical collection or product using the Data Quality Framework. These may also be referred to as Data Quality Declarations.

2. **Why use the ABS Data Quality Framework to assess Data Quality?**

Among national statistical agencies, quality is generally accepted as "fitness for purpose". Fitness for purpose implies an assessment of an output, with specific reference to its intended objectives or aims. Quality is a multidimensional concept which does not just include the accuracy of statistics, but also stretches to include other aspects such as relevance and interpretability.

The ABS Data Quality Framework is based on the Statistics Canada Quality Assurance Framework (2002) and the European Statistics Code of Practice (2005). The ABS Data Quality Framework is comprised of seven (7) dimensions of quality, reflecting a broad and inclusive approach to quality definition and assessment.

3. **How to develop a Data Quality Statement?**

a. **Identify** the data that is being assessed

b. **Review** and assess the data against each of the seven dimensions:

1. Institutional Environment
2. Relevance
3. Timeliness
4. Accuracy
5. Coherence
6. Interpretability
7. Accessibility

c. **Create** a Data Quality Statement using the answers from the Data Quality checklist.

4. **Checklist of questions to generate a Data Quality Statement**

The checklist is made up of two components: first, the type of data being assessed, and second, the questions used to identify and rate the quality of the specific data.

a. Data Details:

What type of data are you assessing?

- Administrative data sources (refers to data generated obtained as a by-product of administrative sources or processes);
- Survey data sources; or
- Combination of data sources.

b. ABS Data Quality Framework checklist

Institutional Environment

i. Which organisation(s) collect the data and what sort of organisation(s)?

ii. What authority/legislation/agreement was the data collected under?

iii. Which organisation(s) compile the data, and what sort of organisation is this (or are these)?

iv. Is statistical confidentiality guarantees, and if so, under what authority or legislation?

v. To what extent and how quickly are any identified errors in published statistics corrected and publicised?

Relevance:

i. About whom, or what, was the data collected?

ii. What levels of geography are data available for?

iii. What key data items are available?

iv. If rates and percentages have been calculated, are the numerators and denominators for the same data source(s)? If not, please provide more information.

v. For example, other questions you may wish to consider include:

1. What was the original purpose for collecting the data?

2. What does the data not represent or cover?

3. Have standard classifications been used? If not, why not?

Timeliness

i. How often is the data collected or expected to be collected?

ii. When did the data become available?

iii. What is the reference period for the data?

iv. For example, other questions you may wish to consider include:

1. Are there likely to be updates or revisions to the data after its release?

2. Are there other less frequent data sources that contain more detailed data that can be used in other reporting years when available?

Accuracy

i. How was the data collected?

ii. Has the data been adjusted in any way? If so, how much was adjusted and on what data items?

iii. What is the sample size?

iv. What is the collection size?

v. What are the standard errors for the key data items?

vi. Please specify any known issues with under counts. What is done to

manage these?

vii. Please specify known issues with over counts. What is done to manage these?

viii. For example, other questions you may wish to consider include:

1. Are there sensitive questions or topics that are collected that may cause bias?

2. What steps have been taken to minimise processing errors?

3. What are the non-response , non-reporting , or item non-reporting rates?

4. Are any parts of the population unaccounted for in the data collected?

Coherence

i. How consistent is the data over time? If there are differences, what are they and what is their impact?

ii. Is the State/Territory/Regional data consistent with each other and the Australia level ?

iii. If the data for the quality statement is based on a percentage or rate, how do the numerator and denominator compare with each other? What are the differences which affect their comparability? What is the impact of these differences?

iv. Is a time series available for this data?

v. For example, other questions you may wish to consider include:

1. Have there been changes to the underlying data collection?

2. Have any real world events impacted on the data since the previous release? How have these impacts on the data been managed?

3. What other data sources is this data comparable with?

4. What other data sources in society report similar information? How do these data sources compare?

Interpretability

i. Is there a particular context that this data needs to be considered within?

ii. What other information is available to help users better understand this data source?

iii. For example, other questions you may wish to consider include:

1. Are there any ambiguous or technical terms that may need further explanation?

Accessibility

i. Can data that hasn't been published be requested?

ii. What are the contact details for requesting more information?

iii. In which formats is the data available for people to use? Where and how do you access them?

iv. Are there any privacy or confidentiality issues that prevent the data from being released publicly?

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Other Sources of Information Related to Quality in the ABS

ABS Methods & Standards

This page contains links to some useful documents about the standards that the ABS applies to its data. Along with some of the methodological and analytical research that the ABS is undertaking.

ABS Forms Design Manual (cat. no. 1530.0)

This manual provides guidance on the design of a range of forms and questionnaires, including choosing a data collection mode and letters to respondents.
It explains the standards used by the ABS in constructing our survey materials.

Quality Management

This automatically generated web page contains information related to quality that is found on the ABS website. It contains some additional information papers not already linked to from within the Statistical Quality Management pages.

The National Statistical Service Information

The National Statistical Service, is led by the ABS, to build a rich statistical picture for a better informed Australia**.** This website provides links to various data quality related information from across Australia and the world.

The National Statistical Service supports an extensive range of exciting initiatives to improve data quality in Australia. The Data Quality Resources page contains a range of NSS information sources to help improve the quality of your data, which are relevant to both statistical producers and users.

National Information and Referral Service

For all Statistical Quality Management queries, please contact us via one of the following:

Ph: **1300 135 070**
Email: Contact form
Hours: 9am-5pm, Monday to Friday

For further information, visit National Information and Referral Service

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